Remarks

The Applicants believe that this amendment places the subject application in better condition for allowance and in so doing introduces no new issues. Therefore, entry of this Amendment, reconsideration of the application, and allowance of all claims pending herein is respectfully requested.

Claims 1-11 were originally presented in the subject application. By the foregoing amendment, claim 1 has been amended to clarify that the upper end of the outlet sleeve, rather than the lower end as inadvertently recited in the original claim 1, "is suitable for being coupled with said lower end of the nozzle." Claim 1 has also been amended to recite "wherein the cylindrical sheath (3) is integral with the second container (2) and said elastic means (9, 10, 11, 12) are adapted to react against the second container (2) so as to push upwards the outlet sleeve (5)." Support for these amendments may be found in the original specification (App. p.2 line 32; p.3 lines 1-2, 7-9; p.4 lines 23-28; Fig. 2), such that no new matter has been added and no new search is required.

Claims 1-11 remain in this case. The Examiner's concerns are addressed separately below, in the order raised in the outstanding Office Action.

Double Patenting

Claims 1-11 stand provisionally rejected on the ground of non-statutory obviousness-type double patenting, as being unpatentable over claims 1-7 of copending Application No. 10/520,602. The instant application and the copending application are commonly owned by Danieli & C. Officine Meccaniche S.P.A.. Accordingly, a terminal disclaimer for the claims of the instant application is filed herewith, pursuant to C.F.R. § 1.321, to obviate this rejection.

Rejections under 35 U.S.C. §103:

Claims 1-11 stand rejected under 35 U.S.C. § 103 as unpatentable over French Publication No. 2,659,880 (FR '880) in view of Lauener, U.S. Patent No. 5,711,367.

Amended claim 1, from which claims 2-11 depend, recites the following:

- "said second container (2) comprises an outlet sleeve (5) the upper end of which is

suitable for being coupled with said lower end of the nozzle (19);"

- "elastic means (9, 10, 11, 12) adapted to push said outlet sleeve upwards;" and
- "a cylindrical sheath (3) surrounding said outlet sleeve (5) and said elastic means . . . wherein the cylindrical sheath (3) is integral with the second container (2) and said elastic means (9, 10, 11, 12) are adapted to react against the second container (2) so as to push upwards the outlet sleeve (5)."

The proposed combination would not produce the claimed invention.

The proposed combination would not produce the invention of claim 1 as amended, since none of the cited references discloses or suggests the characteristics of: a second container having an outlet sleeve; a second container having an integral cylindrical sheath; and/or elastic means reacting against the second container to push upwards the outlet sleeve, as now recited. Accordingly, this rejection, to the extent deemed relevant to amended claim 1 presented herewith, is respectfully traversed.

*The cited references do not teach or suggest the claimed outlet sleeve.*

The Office Action acknowledges that FR '880 does not disclose "an outlet sleeve extending from the second lower container elastically pushed upwards into contact with the nozzle (6)," but states that "Lauener teaches, that in order to provide a more secure connection between an upper first container and a lower second container, it was known in the art at the time the invention was made to employ elastic means in the form of helical springs (96) to secure an outlet sleeve to a nozzle." (Office Action p.3).

Applicants, however, respectfully submit that contrary to the foregoing, Lauener does not teach the use of a secure connection between an upper first container and a lower second container. Lauener also fails to disclose an outlet sleeve secured by elastic means. Instead of a sleeve, Lauener simply discloses a pair of wear strips 56, 58 disposed on opposite sides of tubes extending between his first container and his nozzle. Lauener thus simply discloses a means for securing his nozzle 52 to his upper container 51. Once reaching nozzle 52, Lauener's molten material simply drops, free of any connector, to an open mold passing beneath the nozzle, where it solidifies to form a cast metal product. (Lauener, col. 1, lines 16-18).

In contrast, Applicants' claimed construction, including a second container comprising an outlet sleeve pushed upwards from the second container for coupling to the nozzle, provides a substantially airtight channel for transfering molten metal between a first container and a second container. As disclosed in the specification, "[i]t is therefore an aim of the present invention, to overcome the above mentioned problems by providing a device for discharging molten metal from a container which allows a rapid and precise coupling of the container to another container so as to constitute a conduit for the passage of the molten metal which avoids the contact of the metal with the air." (App. p.2 lines 19-22). The outlet sleeve is useful for this purpose. "Coupling the lower extremity of the nozzle with… the outlet sleeve… creates a channel which connects the interiors of the two containers." (App. p. 3, lines 12-15).

As mentioned above, Lauener does not disclose such a sleeve, but rather, discloses a pair of separate wear strips 56, 58, disposed on opposite sides of tubes 150, 152. These wear strips thus do not form a sleeve or channel capable of transferring molten metal, and moreover, even in combination with FR '880, would only extend as far as the nozzle, without any connection from the nozzle to a lower second container. Instead, the Lauener wear strips are taught to simply secure the tubes 150, 152 between an upper container and a nozzle, and to protect the upper portion of nozzle 52 from frictional wear. "As can be seen from FIG. 3, the wear strips are disposed on either side of the molten metal delivery apparatus 50 in order to protect the upper outer surfaces 102, 104, of the nozzle 52 from wearing by belts 12 and 14. This arrangement also insures a tight secure fit of the tubes between the nozzle 52 and the tundish 51." (Lauener col. 3 lines 65-67, col. 3 lines 43-48).

In light of the foregoing, even if proper, the proposed combination would not include an outlet sleeve, nor would such a sleeve extend any further than the nozzle. Still further, such a sleeve would not be elastically pushed from a second container to couple with a nozzle as claimed. For at least any one of the foregoing alternate reasons, a prima facie case of obviousness has not been made.

*The cited references do not teach or suggest the claimed cylindrical sheath.*

None of the cited references disclose a cylindrical sheath. The Office Action states that FR '880 discloses a ring shaped "blade" 8 and a "sand trap" 9. FR '880 does not, however,

disclose a cylindrical sheath surrounding an outlet sleeve, as recited in claim 1. FR '880 also fails to disclose its gas sealing means (sand trap) as being disposed between such a sheath and its ring shaped blade, as also recited in claim 1.

Lauener similarly fails to disclose a cylindrical sheath. Since Lauener does not disclose a second container, as distinguished from his nozzle, Lauener does not disclose or suggest a cylindrical sheath integral therewith, as recited in claim 1.

Therefore, for these alternative reasons, the proposed combination would not produce the claimed invention, further precluding a prima facie case of obviousness.

There is no suggestion in the references to make, but rather at least one teaches away from, the proposed modification or combination.

There is also no suggestion in the references to make the proposed modification and combination. The references show no recognition of the problem faced by Applicants. As such, the combination of the cited references is not sufficiently pertinent to the particular problem faced by Applicants as to reasonably suggest Applicants' claimed invention to those skilled in the art. Moreover, at least one of the cited references actually teaches away from the proposed combination.

As discussed above, Applicants disclosed a need for a substantially airtight channel through which molten metal may pass between containers. "[T]he need is felt to provide a discharging device, to interpose between the various containers in which the molten metal passes, which allows avoiding contact between the air and the metal and which allows a rapid and precise coupling between the containers, in addition to a likewise rapid uncoupling." (App. p. 2 lines 12-16.)

Lauener does not address this problem. Instead, Lauener discloses a means for delivering molten metal to an open mold (caster), which is then ostensibly exposed to air to facilitate solidification of the metal to form a cast metal product.

> This invention relates to an apparatus for delivering molten metal to a caster, and more particularly to a molten metal delivery apparatus including a tundish, a nozzle, a plurality of tubes disposed between the tundish and the nozzle, and a plurality of wear strips for securing the nozzle to the tundish. The wear strips

> provide a tight secure fit of the tubes to the nozzle and protect the nozzle from wearing.

(Lauener col. 1 lines 6-12). The nozzle does not release the molten metal into an airtight second container, but instead releases it to an open mold formed by moving belts. "The molten metal flows through the nozzle and into the mold, which is formed by a pair of opposed belts and a pair of opposed side dams." (Lauener col. 1 lines 16-18).

Rather than preventing the molten metal from contacting air, it is apparent that Lauener's open caster exposes the molten metal to air, such as to dissipate heat to promote solidification. Lauener thus not only fails to suggest the creation of a substantially airtight channel between separate containers, but rather, effectively teaches away from the claimed construction.

Therefore, amended claim 1 is not rendered obvious by the cited references.

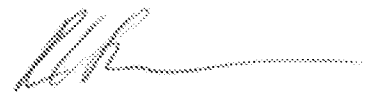
CONCLUSION

For at least each of the foregoing alternate reasons, Applicants respectfully request reconsideration and allowance of amended claim 1 presented herewith. Dependent claims 2-11 are believed allowable for the same reasons as the claims from which they depend, as well as for their own additional limitations. Applicant submits that all of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot.

This application is now believed to be in condition for allowance, and such action at an early date is respectfully requested. However, if any matters remain unresolved, the Examiner is encouraged to contact the undersigned by telephone.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 50-0734** referencing Docket No. 1182.014/3214PTUS. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,



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